

PRESS RELEASE

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ATV Technologie GmbH developing vacuum reflow soldering system with integrated apparatus for thermo-compression bonding in cooperation with TU Berlin

Part of the focus will be on the technological aspects of silver (Ag) sintering. It will also be evaluated in how far the bonding apparatus can be used for other joining technologies such as Transient Liquid Phase Bonding/Soldering (TLPB/S).

"The increasing miniaturisation and complexity of the structures in modern integrated circuit packaging leads to higher requirements with regard to the precision and reproducibility of component bonding systems. The use of new joining technologies such as silver sintering allows higher power densities to be achieved in electrical systems while increasing the energy efficiency," says Dr.-Ing. Ventseslav Rangelov (Technical Director, ATV Technologie GmbH).

Silver sintering is currently being tested in the field of power electronics and is used increasingly when higher operating temperatures and improved reliability are required. A certain mechanical pressure needs to be applied in order to exploit the benefits of this type of joining technology in component assembly. This is because the parts or the contact areas to be joined may bend or warp while the assembly is heated up prior to joining, leaving certain contacts unbonded if no external mechanical pressure is applied. The bonding apparatus developed during the research project allows such Ag sintered connections to be implemented on assemblies.

"We are very happy to have found a partner in TU Berlin's Prof. Dr.-Ing. Dr. sc. techn. Klaus-Dieter Lang that contributes outstanding material and process-related knowledge in the field of microelectronics and packaging to the project. This is a valuable addition to our expertise in the field of the development and production of special systems for vacuum reflow soldering," says Rangelov.

The promising project is funded by the Federal Ministry for Economic Affairs and Energy (BMWi) within the scope of the Central Innovation Programme SME (ZIM).

Contact:
Hannah Putz-Hintermann
Tel.: +49 (0) 8106 30 50 13
Fax: +49 (0) 8106 30 50 99
hannah.putz@atv-tech.de



ATV Technologie GmbH
Joh.-Seb.-Bach-Str.-38
85591 Vaterstetten
Germany
www.atv-tech.de

Caption *PM_TCB_TLPS.jpg*: left Thermo-compression bonding system for substrates up to \varnothing 150 mm; right X-ray images of transient liquid phase bonding of 7x5 mm dummy chip